Abstract of the Disclosure

In knee-replacement surgery, restoration is achieved with respect to the patellar femoral joint in the distal plane is, thereby optimizing patellar femoral mechanics. The depth of the trochlea is increased with increasing implant size. In the preferred embodiment, this is achieved by referencing the extent of the lateral femoral condyle or trochlear region, and resecting the distal femur in accordance with the extent of the lateral femoral condyle or trochlear region. As an alternative, the invention provides for distal femoral and proximal tibial components having bone-contacting and articulating surfaces which account for the measured extent of the lateral femoral condyle or trochlear region. A method of preparing a distal femur according to the invention includes the steps of installing a rod or stem within the intramedullary canal, and attaching a referencing fixture thereto. The extent of the lateral femoral condyle or trochlear region is measured using the referencing fixture, and the distal femur is resected in accordance with the extent of the lateral femoral condyle or trochlear region. The method typically further includes the step of placing a spacer between the referencing fixture and the lateral femoral condyle or trochlear region. The preferred alternative embodiment of the invention involving the use of modified components proceeds similarly, except that after measuring the extent of the lateral femoral condyle or trochlear region using the referencing fixture, distal femoral and proximal tibial components are implanted having bone-contacting and articulating surfaces which take the measurement into account.